

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-17 (canceled)

18. (currently amended) A method of forming an electrochemical chip, comprising:

forming a first plate by:

depositing a conducting layer on a first support; and etching said conducting layer to form an electrode array;

covering at least one electrode of said electrode array with a coating doped with a ferrocene compound;

oxidizing said ferrocene compound during said forming said electrochemical chip;

forming a second plate by:

etching an opening in a second support;

bonding said second plate to said first plate such that said first plate and said second plate define a cavity, with said electrode array being within said cavity.

19. (currently amended) ~~The method of claim 14~~ A method of forming an electrochemical chip, comprising:

forming a first plate by:

depositing a conducting layer on a first support; and etching said conducting layer to form an electrode array;

covering at least one electrode of said electrode array with a coating doped with a ferrocene compound;

forming a second plate by:

etching an opening in a second support;

bonding said second plate to said first plate such that said first plate and said second plate define a cavity, with said electrode array being within said cavity, wherein said coating is a supported bilayer lipid membrane.

20. (currently amended) ~~The method of claim 14~~ A method of forming an electrochemical chip, comprising:

forming a first plate by:

depositing a conducting layer on a first support; and etching said conducting layer to form an electrode array;

covering at least one electrode of said electrode array with a coating doped with a ferrocene compound;

forming a second plate by:

etching an opening in a second support;

bonding said second plate to said first plate such that said first plate and said second plate define a cavity, with said electrode array being within said cavity, wherein said ferrocene compound is benzoylferrocene.

21. (currently amended) The method of claim [[14]] 18 further comprising etching said conducting layer to form a plurality of conducting lines, each of said conducting lines extending from an electrode of said electrode array outwardly beyond a periphery of said electrode array.

22. (currently amended) The method of claim [[14]] 18 further comprising forming said first support by depositing an insulation layer on a silicon wafer.

23. (original) The method of claim 22 further comprising depositing an overlying insulation layer over said conducting layer about a periphery of said array, said second plate being bonded to said

first plate at said overlying insulation layer.

24. (currently amended) The method of claim [[14]] 18 wherein said second support comprises a silicon wafer.

25-30 (canceled)

31. (previously presented) The method of claim 18 wherein said oxidizing said ferrocene compound comprises irreversibly oxidizing said ferrocene compound.

32. (previously presented) The method of claim 31 further comprising selecting a degree of oxidization and oxidizing said ferrocene compound by said selected degree of oxidization.

33. (previously presented) The method of claim 18 wherein said oxidizing said ferrocene compound comprises immersing said at least one electrode in an electrolytic solution after covering said at least one electrode with said coating and cyclically subjecting said at least one electrode to potential changes.

34. (previously presented) The method of claim 33 wherein said ferrocene compound is benzoylferrocene.

35. (previously presented) The method of claim 34 wherein said potential changes cycle between about -0.3 V to $+0.8$ V.

36. (previously presented) The method of claim 18 wherein said coating is a supported bilayer lipid membrane.

37. (currently amended) The method of claim [[14]] 18 further comprising selecting a doping concentration for said ferrocene compound and doping said coating with said ferrocene compound to said selected doping concentration.

38. (new) The method of claim 18 wherein said opening is a window.

39. (new) The method of claim 18 wherein said opening is a depression.